

molding process without connection to an electronic assembly or component thereof, e.g., without electrical connection and/or without mechanical connection. In other example overmolding processes, the power source may be external to the overmold (e.g., the electronic device may provide for removable insertion of a power source, such as via a battery and a battery compartment), and the vibration motor assembly 10 may be overmolded in such process so as to be electrically connectable to such power source (e.g., so connected upon battery insertion in the battery compartment).

**[0064]** As illustrated in FIG. 7B, once the vibration motor assembly 10 and the electronic assembly 70 (and/or any other article(s)) are properly placed inside the mold cavity 65, the mold cavity 65 may be filled with a flowable substance 66. During the process, such flowable substance 66 solidifies around the vibration motor assembly 10 and at least a portion of the electronic assembly 70 and, thereby, connects the vibration motor assembly to the electronic assembly 70, forming an overmolded product 67, as illustrated in FIG. 7c. The flowable substance 66 may be flexible after solidification in some example overmolding processes. It is understood that the flowable substance 66 may fill the mold cavity 65 in FIG. 7b in liquid, semi-liquid or other flowable form. Examples of such flowable substances include thermoplastic polyurethane (TPU), thermoplastic elastomers (TPE), silicone materials, and other moldable elastomers, as well as other polymer resins such as nylon, acetal, polycarbonate, etc. Other examples of such flowable substances include other types of polymeric and/or composite materials. It is understood that such flowable substances may be selected for properties such as viscosity (e.g., at process temperature and pressure), strength, resilience, flexibility (e.g., following molding), bonding capability, compatibility with other materials, and/or other properties. To illustrate, in example overmolding processes, a flowable substance 66 may be selected due to having a viscosity of about 10 Pa·s, or more; in other example overmolding processes, a flowable substance 66 may be selected due to having a viscosity of about 1 Pa·s, or more; and in yet another example overmolding processes, a flowable substance 66 may be selected even if having a viscosity of up to 200 Pa·s. It is understood that this example overmolding process is shown and described in a simplified manner, and that additional steps and parameters may be involved in any implemented overmolding process. In example embodiments, an overmolding process may be used to connect the vibration motor assembly 10 to a component, apparatus or other article that is not a portion of an electronic assembly 70. Such an overmolding process may be conducted in the same or a similar manner as described above, with any such component, apparatus or article replacing the referenced portion of the electronic assembly 70.

**[0065]** Various electronic devices may incorporate various example embodiments of a vibration motor assembly 10 according to description herein, including, as examples, devices that utilize the vibration motor assembly 10 embedded within a solidified, overmolded, flowable substance. For example, FIG. 8 illustrates a so-embedded vibration motor assembly 10 as incorporated in an activity monitoring device 68. FIGS. 12 and 13 further illustrate the positioning and configuration of the vibration motor assembly 10 within the activity monitoring device of FIG. 8. In this activity monitoring device, the vibration motor assembly 10 is received

within a cavity 82 defined by a structural frame 83 of the electronic assembly 70. As shown in FIGS. 12 and 13, the space for mounting the vibration motor assembly 10 is limited, and the vibration motor assembly 10 is configured so as to enable it to fit within that limited space. In this example embodiment, the vibration motor assembly 10 is embedded within solidified, overmolded, flowable substance 66 and is connected to the electronic assembly 70. In example embodiments, the electronic device may include plural vibration motor assemblies 10, which may be connected and positioned similarly to the assembly 10 illustrated in FIGS. 12-13. Examples of an activity monitoring device that may so incorporate a vibration motor assembly 10 are illustrated in U.S. patent application Ser. No. 13/287, 047, filed Nov. 1, 2011, and published as U.S. Patent Application Publication No. 2012/0253485, which is incorporated by reference herein and made part hereof.

**[0066]** Various example embodiments of the vibration motor assembly 10 may be used in various electronic devices, including, e.g., tablet or laptop computers, cell phones, smart phones, personal digital assistants, portable media/music players, other types of touchscreen feedback devices, video game systems and controllers, watches, pagers, heart rate monitors, medical devices (especially small devices worn on the body), etc. Some of these devices may include an electronic assembly 70 as described above, so as to, e.g., control the vibration motor assembly 10 and/or supply power to it (such as, for example, when such assembly 10 is used in a phone to indicate an incoming call or message). Other devices may simply include a power source and a manual activation switch, such as when used in a massager, and may have either no computerized components or only very simple components. Further applications are recognizable to one skilled in the art, and the vibration motor assembly 10 is not limited by any particular application unless explicitly recited in the claims.

**[0067]** Any such device's electronic assembly 70 may be and/or include one or more components, including, as examples: a printed circuit board assembly (PCBA) (not shown), electrical connections (e.g., traces, interconnects, wiring, etc.), and/or other components. Such other components, as illustrated in FIG. 11, may be variously provided, including, e.g., a processor 71, input/output (I/O) 77, and memory 72 (which may include RAM and/or ROM). The processor 71 may be employed, e.g., for controlling overall operation of the assembly 70 and its associated components, or for controlling overall operation of the electronic device and some or all of its components. I/O 77 may include a user input device through which, e.g., a user of the electronic device may provide input, which I/O 77 may include, e.g., a microphone, keypad, touch screen, mouse, and/or stylus, and may also include, e.g., one or more of a speaker for providing audio output and a video display device for providing textual, audiovisual and/or graphical output. In the example assembly 70 of FIG. 8, the I/O 77 includes a button 69a and an LED display 69b. The I/O 77 may also include one or more components for collecting data, information or other input, such as one or more components for collecting biometric input and/or audio input, a barcode or QR-code reader or other device for collecting graphic input, or other type of input device. The I/O 77 may also include one or more of various types of sensors, including single- or multi-axis accelerometers, gyroscopes, magnetometers, and/or other sensors for detecting acceleration and movement